

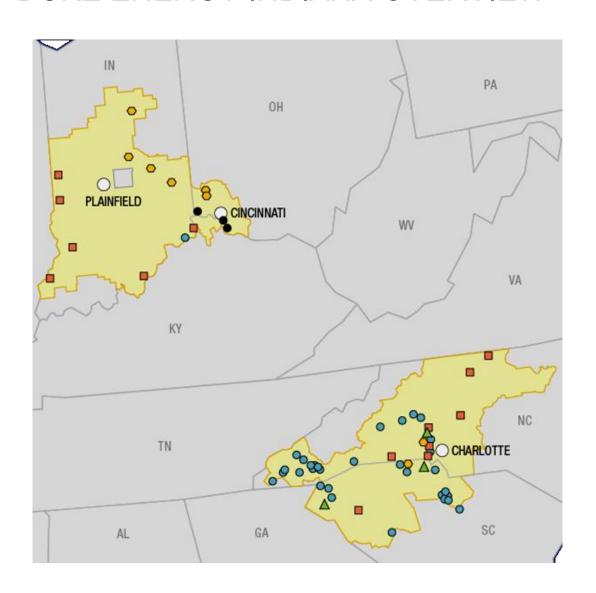


# WIndiana – Wind Energy Conference July 21, 2009

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Director, Regulatory Strategy
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#### **DUKE ENERGY INDIANA OVERVIEW**



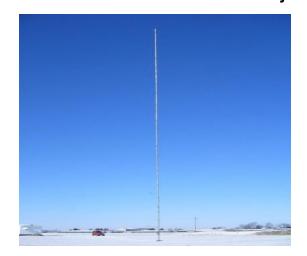
- Duke Energy is located in 5 states: North Carolina, South Carolina, Indiana, Ohio and Kentucky
- Duke Energy Indiana supplies 775,000 retail electric customers in 69 counties
- Peak load is ~6,800 MW



## **Existing Involvement With Wind**



**Wolcott Demonstration Project** 



**Purdue Met Tower** 

- Wolcott, IN Wind Energy Demonstration Project
- Purdue University Meteorological Tower
- Benton County Wind Farm PPA

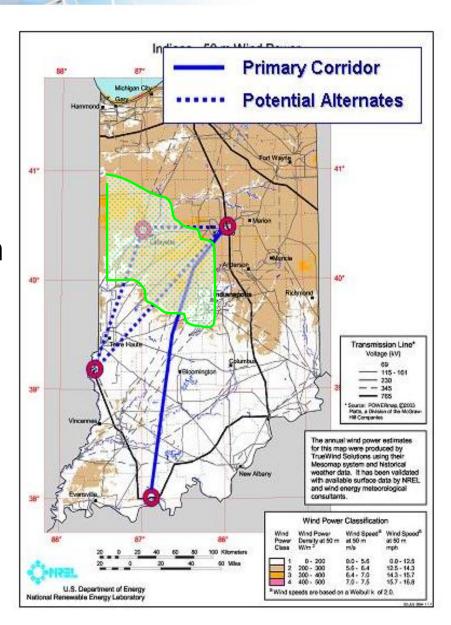


Benton County Wind Farm Photo source: Vision Energy LLC. Used by permission



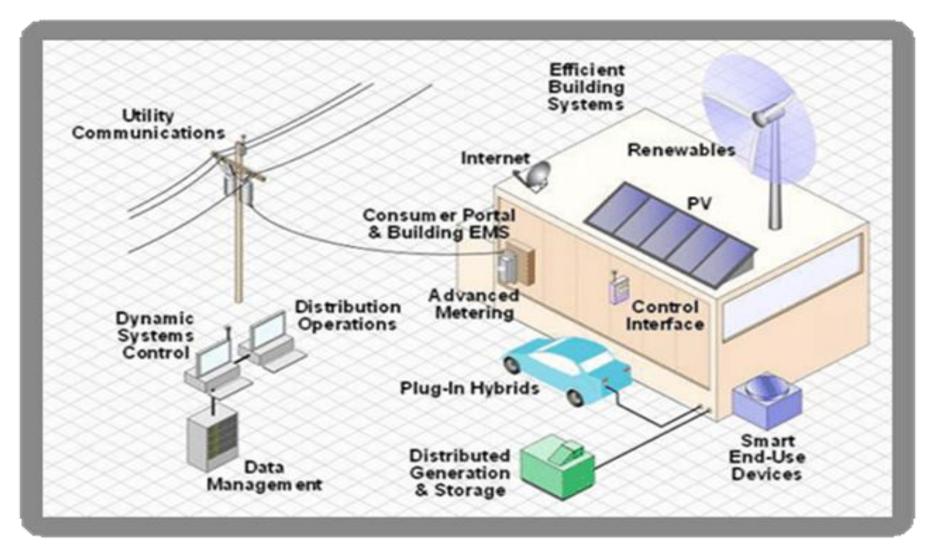
## Pioneer Transmission, LLC

- Joint venture between AEP and Duke Energy to construct ~240 miles of 765 kV transmission from southwest to north central Indiana
- Estimated construction cost: ~\$1 billion
- Potential Benefits:
  - Reduced losses
  - Reduced congestion
  - Improved reliability
  - Enabling ability to transmit wind power





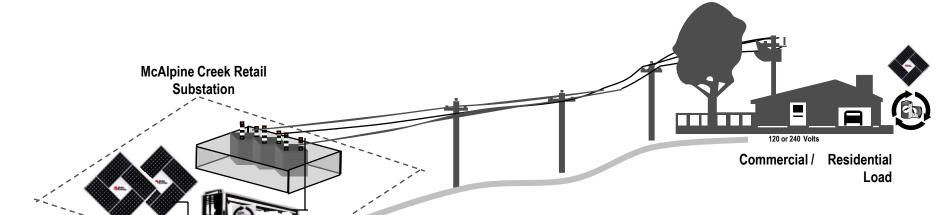
## **SmartGrid Initiative**



Source: EPRI



McAlpine Project Renewable/Battery Storage Testing



#### Photovoltaic Evaluation Criteria:

- Annual Production
- Efficiency
- Lifetime cost
- Footprint
- Site preparation
- Warranty
- •Post installation support

and training

## Energy Storage Evaluation Criteria:

- •Real-time information & control
- Charge from multiple sources
- Power quality
- System efficiency
- Lifetime Cost
- Warranty

Data Integration & Optimization

#### Retail Energy Desk

- Real-time dispatch using locational avoided cost valuation
- · Real-time customer load forecast

#### **EMS Evaluation Criteria:**

- •Telecommunication and network security
- Customer experience and usability
- Technical capability
- •Financial competitiveness
- Sourcing

CONFIGURATION



## **SmartGrid Envision Center**

- Located in Cincinnati, OH
- Interactive exhibit to demonstrate integrated smart grid technologies







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